REMARKS

The Office Action dated November 1, 2005, and the references cited therein have been considered. Claims 1-50 are presently pending. No claims currently stand allowed. Applicants request favorable reconsideration of the previous rejection in view of the following remarks. Please charge any fee deficiencies to Deposit Account No. 12-1216.

Summary of the Rejections in View of the Prior Art

Claims 1-50 are rejected as obvious under 35 U.S.C. Section 103(a) over Dorrance et al., U.S. Patent No. 6,430,598 (the Dorrance patent) in view of Lim et al., U.S. Patent No. 6,718,550 (the Lim patent).

Applicants traverse the grounds for each and every rejection of pending claims 1-50 for at least the reasons set forth herein below. Applicants address the specific rejections in the order they arise in the Office Action.

Summary of Applicants' Claimed Invention

The recited invention is directed to a new way to support multiple client data exchange protocols in a data access server. In particular, the claimed invention is directed to a data access server providing access to process data via a plurality of data exchange protocols supported by a plurality of client data exchange protocol modules. The data access server recited in the claims includes *a set of client data exchange modules* providing access to data via particular *client data exchange protocols* (note plural form of terms). The claimed data access server comprises a server engine that includes a *client application data exchange protocol abstraction layer* comprising a set of operations callable by ones of the *set of client data exchange protocol modules* in response to receipt of requests from client applications. The recited *abstraction layer* (standard interfaces 82 of the DAS engine 90) is interposed between the functional components of the data access server engine, which carry out requests, and the client data exchange modules (DDE plugin 84, OPC plugin 86, and SL plugin 88) that convert protocol-specific requests into the generic requests handled by the protocol abstraction layer. The data exchange module-to-abstraction layer interface enables the data access server engine 90 to respond to requests

submitted by client applications to the set of client data exchange modules according to multiple data exchange protocols.

Furthermore, the claimed modular approach for supporting particular data exchange protocols facilitates extending the supported set of client data exchange protocols. The presently claimed invention offers a new degree of extensibility to client application interfaces in a process control system. Enhanced extensibility/flexibility is achieved in a data access server by decoupling data access server engine functionality (carried out by a generic set of operations provided via interface 82) from the client data exchange protocols used by client applications to access process data via the data access server. The present invention achieves such decoupling by carrying out specific data exchange protocols in a set of program *modules*. These program modules are installed on the data access server to facilitate retrieval/presentation of data to the client applications according to a variety of protocols (e.g., DDE, OPC, SuiteLink, etc.) utilized by the client applications. After installation, the program modules provide a protocol-specific interface to client applications and communicate with the data access server engine via a standardized universal set of operations/interfaces 82. Extending the functionality of the data access server to support additional data exchange protocols is thus accomplished by providing and installing a new data exchange protocol module on the data access server. Previously existing software on the data access server, including the data access server engine and the previously installed protocol-specific protocol modules, need not be modified to include the new data exchange protocol module in the data access server system.

Summary of the Teachings of the Cited Prior Art References

The Dorrance patent discloses an email server that supports message requests issued by a single client in multiple protocols. The multiple protocols are supported by a single converter 65. The converter 65 is a single integral component of the email server 62. The converter 65 receives message requests from a single client in potentially many different protocols (col. 6, lines 44-48). The converter 65 translates the received client requests into a standard server protocol (col. 6, lines 18-21). The Dorrance patent discloses handling multiple protocols via a single client interface component that handles all requests from clients regardless of their protocol. The

Dorrance patent does not suggest that use of a single converter 65 within the email server 62 is somehow disadvantageous.

Furthermore, the Dorrance patent does not disclose the converter 65 as being a module. The Dorrance patent is silent as to the nature of the relationship between the converter 65 and other components of email server 62. However, the fact that the converter 65 handles multiple protocols as well as the complete absence of any description of a modular (or extensible) design for the email server 62 suggests that the converter 65 is an integral component of the email server 62.

Finally, the Dorrance patent does not disclose Applicants' claimed "protocol abstraction layer comprising a set of operation callable by ones of the set of client data exchange protocol modules."

The Office Action asserts that the Lim et al. patent discloses a set of clients. Applicants agree that the Lim patent does indeed disclose a set of clients. However, the Lim et al. patent is completely silent with regard to supporting multiple client data exchange protocols through the use of multiple client data exchange protocol modules.

Applicants' Remarks Concerning the Specific Grounds for the Rejection

Applicants traverse the rejection of **claim 1** as being obvious over Dorrance in view of Lim because the Dorrance and Lim patents do not disclose, in combination, all of the elements of claim 1. As noted previously above, Dorrance is deficient in the specific point where the invention recited in claim 1 departs from the prior art – support of multiple data exchange protocols through a set of data exchange protocol *modules*. Furthermore, Applicants assert that there is no disclosure of Applicants' disclosed and claimed "data exchange protocol abstraction layer comprising a set of operations callable by ones of the set of client data exchange protocol modules." The Office Action cites the server 62 in support of its asserted teaching of the "abstraction layer" in the Dorrance patent. However, there are clearly no specific teachings of such a layer in Dorrance.

The Office Action appears to concede that Dorrance does not teach a "set of client" data exchange protocol modules. However, the Office Action does not appear to appreciate the functionality or purpose of Applicants' recited "set of client data exchange protocol modules" or

the corresponding "abstraction layer" with which the multiple client data exchange protocol modules interface. Instead, the Office Action references passages in Lim relating to the presence of multiple "clients" – not client data exchange protocol modules.

Applicants furthermore traverse the Office Action's stated basis for combining the Dorrance and Lim references. The Office Action states that combining Lim's multiple clients with Dorrance "would have provided specific functions that can improve and reduce the performance of object in distributed object system". To the extent this statement is understood, it asserts that combining Lim with Dorrance somehow would improve the operation of Dorrance. However, operationally, Dorrance does not seem to have any operational shortcomings for its intended use in an email server system. It is a fully functional system which likely runs in a satisfactory manner using a tightly integrated multiple-protocol message converter.

Applicants respectfully submit that the recited invention in claim 1 is not rendered obvious by the combined teachings of the Dorrance and Lim patents. The Dorrance patent neither discloses nor suggests a need to modularize client request protocol interfaces which, in turn, communicate with a data access server engine via an abstraction layer. The Lim patent merely discloses multiple clients. The email system disclosed in the Dorrance patent can already handle multiple client requests using multiple different protocols. Applicants therefore submit that there is no need to modify Dorrance to accommodate multiple clients using different protocols. Therefore, the claimed invention is not rendered by the combined teachings of Dorrance and Lim.

The Dorrance patent discloses an email server system that does not appear to need the claimed invention, including a set of modular client data exchange protocol-specific components and an abstraction layer on a data access server engine that provides an interface for such components. In the event that the pending rejection is not withdrawn, Applicants respectfully request an explanation of the stated grounds/motivation for combining the teachings of Dorrance and Lim to render the claimed invention at the bottom of page 3 of the Office Action. Applicants note that neither Dorrance nor Lim appears to disclose Applicants' recited "modules". Applicants furthermore request specific identification of teachings of the recited "abstraction layer" in Dorrance – as opposed to the general reference to the entire email server 62 which is provided in the pending Office Action.

Applicants further note that the Dorrance patent is directed to an email server and does not constitute a data access server for process control systems. Such control systems comprise a wide variety of discrete and distributed regulatory control systems. However, even given its broadest interpretation, control systems would not appear to include email servers of the type disclosed in Dorrance.

Applicants traverse the rejection of independent **claims 22 and 44** for the reasons set forth above with regard to **claim 1**. Claim 22 defines a method for responding to client requests by one of a set of client data exchange protocol modules that is neither disclosed nor suggested by the combined teachings of the Dorrance and Lim patents. Claim 44 is directed to the dynamic creation of the data access server that is neither disclosed nor even remotely disclosed in the passages recited from Dorrance and Lim. The citations to the Dorrance and Lim patents in the rejection of claim 44 have little, if any, relevance to the recited elements of claim 44.

Applicants traverse the rejection of **claims 2-5, 30, and 45-48** for at least the reasons set forth herein above with regard to claims 1, 22 and 44. Furthermore, Applicants submit that neither Dorrance nor Lim even remotely disclose plugins – or any form of modular software components. In the event that the rejection is not withdrawn, Applicants request identification of a teaching of plugins within either Dorrance or Lim.

Applicants traverse the rejection of **claims 6, 31 and 49** for at least the reasons set forth herein above. In particular, neither Dorrance nor Lim discloses a modular approach for supporting client data exchange protocols. In the case of Dorrance, a single component handles all supported protocols. Lim does not include any disclosure that would suggest providing a set of protocol-specific modules.

In addition to the grounds recited above for claim 1, Applicants traverse the rejection of dependent **claim 7** for at least the additional reason that the Office Action has not identified any module "loading" mechanism as recited in claim 7, and instead merely references FIG. 3 which does not even identify a startup process or module loading function. In the event the rejection is not withdrawn, Applicants request identification of the specific portions of FIG. 3 in Dorrance that teach the claimed startup process and protocol module loading mechanism.

Applicants traverse the rejection of **claims 8, 25 and 50** for the above reasons described with regard to claim 1. Furthermore, claims 8, 25 and 50 recite multiple differing types of data

exchange protocol modules calling a same callable operation on the server engine. In the event that the rejection is not withdrawn, Applicants request identification of specific teachings in the Dorrance patent showing that two distinct protocol modules (not clients) call a same operation on the data access server engine. Since Dorrance discloses a single converter 65 (asserted by the Office Action as corresponding to the protocol modules), such teaching cannot be present in Dorrance since at least two converters would have to be present.

Applicants traverse the rejection of **claim 9** for at least the above reasons described with regard to claim 1. The cited reference neither discloses nor suggests an arrangement wherein the client data exchange module and data access server comprise independently designated files. In the event the rejection is not withdrawn, Applicants request specific identification of the portions of the cited reference wherein the recited start-up process is carried out through independently designatable protocol module and data access server files.

Applicants traverse the rejection of **claims 10-11 and 32-33** for at least the reasons provided herein above with regard to independent claims 1 and 22 from which these claims depend.

Applicants traverse the rejection of **claims 12 and 34**. Applicants acknowledge that filtering out unchanged information is a known data compression technique. However, Applicants know of no teachings in the prior art disclosing incorporating such functionality into the invention recited in claims 11 and 33.

Applicants traverse the rejection of **claims 13-21, 23-29 and 35-43**. The rejected claims recite specific operations that are known generally in the data access server art. However, none have been incorporated into an interface supported by the recited data access server engine and callable by a variety of protocol-specific modules as recited in claims 1 and 22. None of these operations are disclosed in either Dorrance or Lim. Applicants further note that the citations to the prior art do not appear to match the assertions of alleged teachings of recited claim elements. In the event that the rejection is not withdrawn, Applicants request correction of the present citations.

In summary, the present invention is distinguishable from the cited references for a variety of reasons. Most importantly, the invention recited in the presently pending claims is directed to a process data access server that supports a variety of client data exchange protocols

(e.g., DDE, OPC, SuiteLink, etc.) via a set of protocol modules. The multiple protocol modules interface with a data access server engine via an abstraction layer comprising a generic set of callable operations. While the prior art does indeed disclose supporting multiple protocols, the recited *way* in which multiple client support is provided is neither disclosed nor suggested in the prior art. For at least the reasons set forth herein, each of the presently pending claims is patentable over the prior art.

Conclusion

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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